SERDP Ecosystem Management Project

Providing Scientific Data, Tools and Analysis Techniques for Ecosystem Management of Military Lands

SERDP's SEMP

Background:

The U.S. Department of Defense is committed to proactive ecosystem management of military lands and waterways. Installations in all of the services conduct active and often award winning ecosystem management programs, supporting both the sustainable mission use of military lands and stewardship of the valuable ecological resources on these lands.

All of the DOD services have expressed (in formal research requirements and through other mechanisms) the need for better understanding of ecological processes and trends on military lands, the ecological relationship of military lands to their surrounding lands, and the interactions between mission activities and ecological processes. In response to these expressed needs, the Strategic Environmental Research and Development Program (SERDP) sponsored a workshop , in June 1997, entitled The Management-Scale Ecosystem Research Workshop. Workshop participants identified some of the critical knowledge gaps in understanding ecosystem status, especially as they relate to military land management concerns. The primary themes that emerged from the Workshop included:

1) Ecosystem Health or Change Indicators,
2) Thresholds of Disturbance,
3) Biogeochemical Cycles and Processes, and
4) Ecosystem Processes as they relate to multiple temporal and spatial scales.

After this workshop, SEMP was created as a new SERDP project to pursue ecosystem research relevant to DOD ecosystem management concerns (including the research themes from the 1997 SERDP Workshop).

SEMP Objectives:

- Addressing DOD requirements and opportunities in ecosystem management research,
- Establishing and managing one (or more) long-term ecosystem monitoring sites on DOD facilities for DOD relevant ecosystems research,
- Conducting multiple ecosystem research and monitoring efforts, relevant to DOD requirements and opportunities, at these and/or additional facilities, and
- Facilitating the integration of results and findings of research into DOD ecosystem management practices.

Technical Approach:

SEMP is organized with a Program Manager, a Technical Advisory Committee (TAC), an Ecological Characterization and Monitoring Team, Host Site(s) Points of Contact, and Research Teams. When it started in FY99, SEMP developed statements of need (SONs) for research efforts to meet its objectives. These SONs were then handled like other SERDP SONs, with solicitations made through the SERDP website (http://www.serdp.org) and other mechanisms. The responses were then sent out for a scientific peer review. The SEMP TAC performed a second level of review, and made recommendations for funding to the SERDP Executive Director and Scientific Advisory Board.

Five research teams, representing many universities and two government research institutions were selected to perform research on the two major SEMP objectives, "Change Indicators" and "Disturbance Thresholds." These different research teams work in a collaborative context -- sharing field sites and approaches, entering data into a common repository, reviewing each other's findings, and contributing to common technology transfer mechanisms.

The Ecological Characterization and Monitoring Initiative (ECMI) Team is led by researchers from the U.S. Army Corps of Engineers Engineer Research and Development Center (ERDC). This team works with the host installation to gather, assess and document historic and current ecological data sources and monitoring efforts. In addition, this team is responsible for long term ecological monitoring. Data from the characterization effort, the monitoring efforts and the research teams all flows into the common data repository, shared by all teams and the installation managers.

For more information, check out our website at
http://www.denix.osd.mil/SEMP

Harold Balbach, Program Manager
U.S. Army Engineer Research and Development Center
Phone: (217) 373-6785
Fax: (217) 373-7266
E-mail: h-balbach@cecer.army.mil

Host Installation SEMP POCs

John Brent, Chief Env. Division
Fort Benning, GA
Phone: (706) 545-2180
Fax: (706) 545-4209
E-mail: BrentJ@benning.army.mil

Pete Swiderek
Fort Benning, GA
Phone: (706) 544-7077
Fax: (706) 544-6570
E-mail: swiderekp@benning.army.mil

Hugh Westbury
Host Site Coordinator
Fort Benning, GA
Phone: (706) 545-7882
Fax: (706) 545-1124
E-mail: WestburyH@benning.army.mil

ERDP's SEMP

SERDP Ecosystem Management Project

Host Site Installation:

Fort Benning, Georgia, volunteered to be the site for SEMP. Known as the "Home of the Infantry," this 182,000 acre area is of critical importance to the Army's training mission. It is located in portions of both the Piedmont and Upper Coastal Plain physiographic provinces in southwest Georgia and southeast Alabama. The area has significant biological diversity, harboring a number of threatened and endangered species and several unique and valuable natural communities.

Ecosystem Characterization and Monitoring Initiative (ECMI):

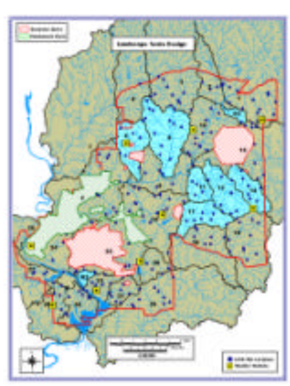
The Ecosystem Characterization and Monitoring Initiative (ECMI) is designed to characterize the long-term spatial and temporal dynamics of key ecosystem properties and processes. POCs for the ECMI effort are:

Dr. David Price or Dr. Rose Kress
Phone: (601) 634-4874 or 2610 or 3665
E-mail: priced@wes.army.mil; kressr@wes.army.mil

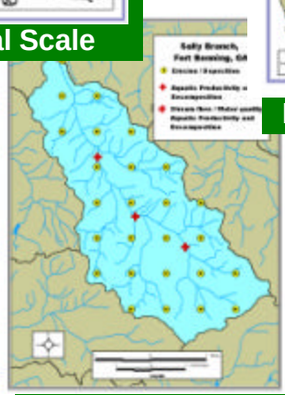
ECMI Phases

PHASE I 1999 - 2001 **DESIGN**	PHASE II 2002 - 2005 **ADAPT**	PHASE III 2006 - **MAINTAIN**
Extended design, implementation and documentation	Adaptation based on: a) initial monitoring results b) SEMP research results c) land management experience	Long-term maintenance and technology upgrades

Regional Scale



Installation Scale



Watershed Scale

Determination of Indicators of Ecological Change

The objective of this group of projects is to identify indicators that signal ecological change in intensively and/or lightly used ecological systems on military installations.

Determination of Indicators of Ecological Change

K. Ramesh Reddy, Project Manager
Phone: (352) 392-1803
E-mail: krr@mail.ifas.ufl.edu

Development of Ecological Indicators for Land Management

Harold Balbach, Project Manager
Phone: (217) 373-6785
E-mail: h-balbach@cecer.army.mil
Tony Krzysik, Research Coordinator
Phone: (928) 777-2106
E-mail: krzysika@cableone.net

Indicators of Ecological Change

Virginia Dale, Project Manager
Phone: (865) 576-8043
E-mail: Vhd@ornl.gov

Ecological Disturbance in the Context of Military Landscapes :

The objective of these projects is to develop the knowledge required to implement adaptive ecosystem management approaches for military lands and waters, as well as other federal facility lands and waters.

Disturbance of Soil Organic Matter and Nitrogen Dynamics: Implications for Soil and Water Quality

Charles Garten, Project Manager
Phone: (865) 574-7355
E-mail: ctg@ornl.gov

Thresholds of Disturbance: Land Management Effects on Vegetation and Nitrogen Dynamics

Beverly Collins, Project Manager
Phone: (803) 725-8158
E-mail: collins@srel.edu

Benefits:

Outcomes from the research efforts are procedures, analysis tools, publications, and workshops all aimed at improving our understanding of ecological processes and mission interactions with these processes on military lands.. Monitoring and repository approaches at host sites are transferable components of SEMP, as well as outcomes from the research projects. Workshops with host installations (and other installation land/water managers) are a regular part of the technology review and transfer process.

For more information, check out our website at
http://www.denix.osd.mil/SEMP

REV 12/30/02